

ABSTRACT

The invention provides a battery which can improve cycle characteristics by forming a more stable and stronger film on the surface of an anode active material layer. A cathode and an anode are layered with a separator in between. The anode has an anode collector and the anode active material layer. The anode active material layer contains Si, Sn, or an alloy thereof, and formed by vapor-phase method, liquid phase method, or sinter method. It is preferable that the anode active material layer is alloyed with the anode collector on at least a part of interface between the anode active material layer and the anode collector. The separator is impregnated with an electrolyte solution. The electrolyte solution contains cyclic carbonic ester having saturated bonds such as vinylene carbonate and vinylethylene carbonate as a solvent. Consequently, a strong and stable film is formed on the surface of the anode active material layer, and decomposition of the electrolyte solution in the anode is inhibited.